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Laboratory
Research Triangle Park NC 27711

Research and Development

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Project Summary

Summary of Coal-Based Synthetic Fuel Initiatives

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This special report of the Coal Technology Assessment (CTA) program was prepared to assist the Office of Environmental Engineering and Technology of the Environmental Protection Agency in the collection and verification of information on the status of demonstration and commercial-scale plants for the production of coal-based synthetic fuels through gasification and liquefaction. Data on the scope of this emerging industry, funding sources, products, and costs were obtained by reviewing current literature and contacting the primary vendors or licensors of the processes found. These data are the same as in the main report; no modifications have been attempted.

Of the 88 synthetic fuel projects identified, 66 represent gasification processes (29 for the production of low-Btu gas and 37 for the production of high-Btu gas), and 22 represent liquefaction processes. Table 1 shows the breakdown of these projects by process and status as of mid-August 1980. Maps in the main report show their locations throughout the United States. The total production capacity of these synthetic fuel initiatives is shown in Table 2. Further tabulations in the main report show sponsors, estimated production costs, scales, types of coal involved, feed rates of coal, capital costs, and operation and maintenance costs.

The report also contains a brief commentary of each identified project. It is important to recognize that new synthetic fuel initiatives are being proposed on a continuous basis; it is recommended that summary efforts such as this one be conducted periodically.

This Project Summary was developed by EPA's Industrial Environmental Research Laboratory, Research Triangle Park, NC, to announce key findings of the research project that is fully documented in a separate report of the same title (see Project Report ordering information at back).

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Table 1. Summary of Identified Coal Conversion Projects

Product	Process	Number operating[a]	Idle[b]	Number under construction	Number in design	Number in study	Number unknown	Total
Low-Btu Gas	Wellman-Galusha	8	1	3			1	13
	Wellman Incandescent	1					1	2
	Combustion Engineering	1				1		2
	Texaco	0			1	1		2
	Allis-Chalmers	1						2
	Chapman (Willputte)	1						1
	Foster Wheeler/Stoic	1						1
	Riley Morgan	1						1
	Woodall-Duckman	0					1	1
	Westinghouse	1						1
	Tri-gas	1						1
	Gulf	1						1
	Unknown	0				1		1
Med-high Btu gas	Lurgi			2		10	1	13
	IGT-Hygas	1			2	2		5
	Texaco			1		2	1	4
	Bi-Gas	1						1
	Synthane		1					1
	COED-COGAS				1			1
	BGC		1					1
	Self-agglomerating ash	1						1
	Stearns & Rogers	1						1
	Hydrane		1					1
	Garrett	1						1
	Exxon	1						1
	Fischer-Tropsch					1		1
	Flash hydropyrolysis	1						1
	Unknown					4		4
Coal liquids	Fischer-Tropsch				1	1	1	3
	SRC-II	2		1				3
	H-coal	1				1		2
	SRC-I	1				1		2
	COED		1					1
	Clean coke	1						1
	Exxon Donor Solvent			1				1
	TOSCO II	1						1
	Clean Fuel From Coal (CFFC)	1						1
	Direct hydrogeneration	1						1
	Flash pyrolysis		1					1
	Texaco & Mobil					1		1
	Mobil					1		1
	SASOL III					1		1
	Unknown					2		2

[a]On any scale.
[b]Operational at one time; now inactive or dismantled.

Table 2. *Summary of Synfuels Production*[a]

Process	Number of values reported	Total 10^6 Btu/h equivalent	Total 10^3 bbl oil/day equivalent	Total 10^6 scf/day	Miscellaneous units
Low	11	292.3		7.5	708 MW
High	26	125,000	132	129,874	135[b]
Liquefaction	13		718		100[c]

[a] *All values are summarized in units as given by the synfuel project contacts. The production values for each column are not equivalent. Applicable metric conversions follow:*

10^6 *Btu* = 1.055$_3$ *GJ*
10^3 *bbl* = 159 *m*
10^6 *scf* = 26,300 Nm^3

[b] *Fuel produced can be used to produce 135 tons of ammonia per day.*

[c] *Fuel produced can be used to produce 100 tons of gasoline per day.*

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***M. K. Bergman** is the EPA Project Officer (see below).*
The complete report, entitled "Summary of Coal-Based Synthetic Fuel Initiatives," (Order No. PB 81-168 742; Cost: $6.50, subject to change) will be available only from:
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
Telephone: 703-487-4650
The EPA Project Officer can be contacted at:
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